# Rotavirus G2 Serotypes Are Emerging in Infants

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KANSAS CITY, MO. — Rotavirus G2 serotypes caused an unexpectedly high proportion of rotavirus dehydrating acute gastroenteritis in infants and children during the 2005-2006 epidemic season in Philadelphia, data from an industry-sponsored study show.

Serotype G1P1A[8] is the most common circulating human rotavirus during an epidemic, while G2 serotypes emerge sporadically. Overall, 45% of 2005-2006 rotavirus acute gastroenteritis (AGE) cases at Children's Hospital of Philadelphia (CHOP) were caused by non-G1 serotypes, predominantly G2, Diane Lawley, R.N., and her associates reported in a poster at the National Immunization Conference sponsored by the Centers for Disease Control and Prevention.

Annual surveillance at Children's Hospital of Philadelphia indicates a steady increase in the number of rotavirus AGE cases since the 1994-1995 season. In 2005-2006, there were 306 evaluable cases, compared with 92-185 cases during the preceding 11 consecutive seasons.

Final analysis of 275 community-acquired cases in 2005-2006, after 31 nosocomial cases were removed from analysis, indicated that G2 serotypes caused 101 (37%) cases of AGE, compared with just 1%-11% in the preceding 6 years in the study was conducted by Merck Research Laboratories in West Point, Pa., and CHOP's Clark Laboratory, which receives funding from Merck.

In addition, 21 (8%) serotype G9 cases were identified in 2005-2006.

Data were not available for the entire 11 seasons because only a limited number of samples were tested during the first 5 seasons, Ms. Lawley explained in an interview.

G2 serotypes caused proportionally more gastroenteritis in infants 5 months of age or less (34 cases) and in infants age 12-17 months (15 cases). G2 serotypes also were more common in black infants (80 cases), and in infants from urban versus nonurban homes (66 vs. 34), the authors reported.

The majority of samples in the study were obtained from CHOP inpatients (86%) or patients evaluated in the emergency department (10%), with a smaller percentage (4%) coming from outpatient clinics.

"Although untested, the inability to predict large non-G1 rotavirus outbreaks may favor the use of a multivalent vaccine that specifically protects against G2 infections, which usually do not coexpress P1A[8]," the authors concluded.

Merck's new oral pentavalent rotavirus vaccine (RotaTeq), licensed in the United States in 2006 for children aged 6-32 weeks, contains serotypes G1-4 and G1P1A[8].

GlaxoSmithKline's new monovalent vaccine (Rotarix), licensed in Mexico and numerous other countries, contains the G1P1A[8] serotype. ■

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tibiotic produced an 84% reduction in the rate of IPD among children with SCD the researchers said (N. Engl. J. Med. 1986;314:1593-9).

This study has several limitations, according to Dr. Halasa and her team: The number of individuals with SCD and IPD was small and consisted of patients who lived in surveillance counties in Tennessee and who were enrolled in the Tennessee Medicaid program.

"The pre-PCV era IPD rates in individuals with SCD in this study, however, were nearly identical to those reported from other locations, suggesting that these results are generalizable to others with SCD in the United States," they argue.

A second limitation was that vaccination records, especially from the period prior to the introduction of PCV, may not have captured receipt of all pneumococcal vaccines by persons enrolled in TennCare.

With the universal administration of PCV to all children, both with and without SCD, it is expected that the rates of IPD will continue to decrease among all children, the authors wrote.

"However, ongoing monitoring of these rates and serotyping of all invasive pneumococcal isolates must remain an important priority to monitor whether serotype replacement will occur under continued vaccine pressure. Despite this caution, our data indicate that PCV is effective for reducing the rate of IPD, especially among vulnerable populations," they concluded. ■